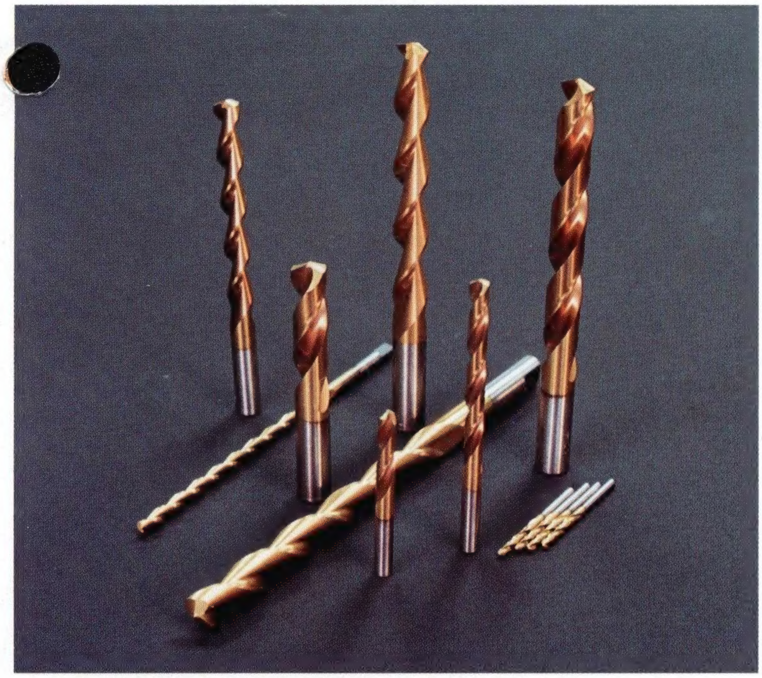
TiN COATED/HIGH PERFORMANCE DRILLS

TITANIUM NITRIDE COATED DRILLS



TIN COATED DRILLS

This high performance coating is an excellent choice for operations demanding superior drill performance.

[illegible] wide range of close tolerance drills coated with titanium nitride can provide you with the following benefits:

- Increased tool life - up to 500% or greater life, depending upon the application.
- Increased cutting rates - up to 50% over uncoated rates with no sacrifice in tool life.
- Improved hole finish - the reduced wear on the cutting edges of the drill gives an observably improved finish.
- High abrasion resistance and lubricity - the coating hardness of over 80 R"c" prevents abrasive wear. Friction is reduced due to the high lubricity.
- Reduced cutting forces and temperature - the low coefficient of friction reduces the force needed and temperature generated.
- Regrinds last longer - even after the points are reground, the tool life will be substantially longer than uncoated drills.

Distributed By:

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TITANIUM NITRIDE (TiN) COATING
THE HARD FACTS

TiN coating is a very hard, wear resistant coating. All of our drills are coated using the low temperature Physical Vapor Deposition (PVD) method. This process provides a .0001" - .0002" thick coating with a R"c" hardness equivalent of 84. The low temperature eliminates any dimensional or temper change in the base drill material. The resulting surface hardness exceeds that of tungsten carbide and is about four times as hard as HSS.

The high hardness of the TiN coating yields the exceptional wear benefits identified earlier.

HEAVY DUTY vs. GENERAL PURPOSE

All of our TiN coated drills are high-molybdenum tool steel with heavy duty construction. The combination of a high performance coating over our best drill substrate will give you the superior performance you expect. The small premium you may pay for our TiN coated heavy duty drills over a general purpose TiN coated drill well be made up very quickly in the performance advantages.

TYPE 190-AN JOBBERS LENGTH DRILLS

SUPER HIGH PERFORMANCE, HEAVY DUTY 135° SPLIT POINT IDEAL FOR HARD METALS, WORK HARDENING STAINLESS AND OTHER DIFFICULT TO DRILL OR ABRASIVE MATERIALS. Sizes smaller than 1/16 & #52 have 118° points.

6 per pack 1/64-9/32 A-L #1-60
3 per pack 19/64-1/2 M-Z

Part Number	Diameter Inches	Overall Length Inches
97920	1/64	3/4
97910	1/32	1-3/8
97900	3/64	1-3/4
97890	1/16	1-7/8
97880	5/64	2
97870	3/32	2-1/4
97860	7/64	2-5/8
97850	1/8	2-3/4
97840	9/64	2-7/8
97830	5/32	3-1/8
97820	11/64	3-1/4
97810	3/16	3-1/2
97800	13/64	3-5/8
97790	7/32	3-3/4
97780	15/64	3-7/8
97770	1/4	4
97760	17/64	4-1/8
97750	9/32	4-1/4
97740	19/64	4-3/8
97730	5/16	4-1/2
97720	21/64	4-5/8
97710	11/32	4-3/4
97700	23/64	4-7/8
97690	3/8	5
97680	25/64	5-1/8
97670	13/32	5-1/4
97660	27/64	5-3/8
97650	7/16	5-1/2
97640	29/64	5-5/8

Part Number	Diameter Inches	Overall Length Inches
97630	15/32	5-3/4
97620	31/64	5-7/8
97610	1/2	6
95710	A	3-7/8
95700	B	4
95690	C	4
95680	D	4
95670	E	4
95660	F	4-1/8
95650	G	4-1/8
95640	H	4-1/8
95630	I	4-1/8
95620	J	4-1/8
95610	K	4-1/4
95600	L	4-1/4
95590	M	4-3/8
95580	N	4-3/8
95570	O	4-1/2
95560	P	4-5/8
95550	Q	4-3/4
95540	R	4-3/4
95530	S	4-7/8
95520	T	4-7/8
95510	U	5
95500	V	5
95490	W	5-1/8
95480	X	5-1/8
95470	Y	5-1/4
95480	Z	5-1/4

TYPE 190-AN Con't

Part Number	Diameter Inches	Overall Length Inches
98520	#1	3-7/8
98510	2	3-7/8
98500	3	3-7/8
98490	4	3-3/4
98480	5	3-3/4
98470	6	3-3/4
98460	7	3-5/8
98450	8	3-5/8
98440	9	3-5/8
98430	10	3-5/8
98420	11	3-1/2
98410	12	3-1/2
98400	13	3-1/2
98390	14	3-3/8
98380	15	3-3/8
98370	16	3-3/8
98360	17	3-3/8
98350	18	3-1/4
98340	19	3-1/4
98330	20	3-1/4
98320	21	3-1/4
98310	22	3-1/8
98300	23	3-1/8
98290	24	3-1/8
98280	25	3
98270	26	3
98260	27	3
98250	28	2-7/8
98240	29	2-7/8
98230	30	2-3/4

Part Number	Diameter Inches	Overall Length Inches
98220	31	2-3/4
98210	32	2-3/4
98200	33	2-5/8
98190	34	2-5/8
98180	35	2-5/8
98170	36	2-1/2
98160	37	2-1/2
98150	38	2-1/2
98140	39	2-3/8
98130	40	2-3/8
98120	41	2-3/8
98110	42	2-1/4
98100	43	2-1/4
98090	44	2-1/8
98080	45	2-1/8
98070	46	2-1/8
98060	47	2
98050	48	2
98040	49	2
98030	50	2
98020	51	2
98010	52	1-7/8
98000	53	1-7/8
97990	54	1-7/8
97980	55	1-7/8
97970	56	1-3/4
97960	57	1-3/4
97950	58	1-5/8
97940	59	1-5/8
97930	60	1-5/8

TYPE 135-TN STUB LENGTH DRILLS

SUPER HIGH PERFORMANCE, HEAVY DUTY 135° SPLIT POINT IDEAL FOR HARD METALS, WORK HARDENING STAINLESS AND OTHER DIFFICULT TO DRILL OR ABRASIVE MATERIALS. SIZES SMALLER THAN 52 HAVE 118 POINTS

6 per pack 1/16-9/32 #1-60
3 per pack 19/64-1/2

Part Number	Diameter Inches	Overall Length Inches
97600.	1/16	1-5/8
97590	5/64	1-11/16
97580	3/32	1-3/4
97570	7/64	1-13/16
97560	1/8	1-7/8
97550	9/64	1-15/16
97540	5/32	2-1/16
97530	11/64	2-1/8
97520	3/16	2-3/16
97510	13/64	2-1/4
97500	7/32	2-3/8
97490	15/64	2-7/16
97480	1/4	2-1/2
97470	17/64	2-5/8
97460	9/32	2-11/16
97450	19/64	2-34
97440	5/16	2-13/16
97430	21/64	2-15/16
97420	11/32	3
97410	23/64	3-1/16
97400	3/8	3-1/8
97390	25/64	3-1/4
97380	13/32	3-5/16
97370	27/64	3-3/8
97360	7/16	3-7/16
97350	29/64	3-9/16
97340	15/32	3-5/8
97330	31/64	3-11/16
97320	1/2	3-3/4
96670	#1	2-7/16
96660	2	2-7/16
96650	3	2-3/8
96640	4	2-3/8
96630	5	2-3/8
96620	6	2-3/8
96610	7	2-1/4
96600	8	2-1/4
96590	9	2-1/4

Part Number	Diameter Inches	Overall Length Inches
96580	10	2-1/4
96570	11	2+1/4
96560	12	2-1/4
96550	13	2-3/16
96540	14	2-3/16
96530	15	2-3/16
96520	16	2.3/16
96510	17	2-3/16
96500	18	2-1/8
96490	19	2-1/8
96480	20	2-1/8
96470	21	2-1/8
96460	22	2-1/8
96450	23	2-1/16
96440	24	2-1/16
96430	25	2-1/16
96420	26	2-1/16
96410	27	2-1/16
96400	28	1-15/16
96390	29	1-15/16
96380	30	1-15/16
96370	31	1-7/8
96360	32	1-7/8
96350	33	1-7/8
96340	34	1-7/8
96330	35	1-7/8
96320	36	1-13/16
96310	37	1-13/16
96300	38	1-13/16
96290	39	1-13/16
96280	40	1-13/16
96270	41	1-13/16
96260	42	1-3/4
96250	43	1-3/4
96240	44	1-3/4
96230	45	1-3/4
96220	46	1-3/4
96210	47	1-3/4

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TYPE 135-TN Con't

Part Number	Diameter Inches	Overall Length Inches
96200	48	1-11/16
96190	49	1-11/16
96180	50	1-11/16
96170	51	1-11/16
96160	52	1-11/16
96150	53	1-5/8
96140	54	1-5/8

Part Number	Diameter Inches	Overall Length Inches
96130	55	1-5/8
96120	56	1-3/8
96110	57	1-3/8
96100	58	1-3/8
96090	59	1-3/8
96080	60	1-3/8

TYPE 190-PT JOBBERS LENGTH DRILLS

PARABOLIC FLUTE, HEAVY DUTY 135° SPLIT POINT
Parabolic flute drills are designed to allow deep hole drilling without frequent drill removal to clear chips. Performs best in low to medium tensile strength materials. The split point and heavy duty design provide superior performance by permitting higher feed rates and continuous drilling of deep holes. The super hard TiN coating may extend tool life 500% or more in very abrasive drilling applications.

6 per pack 1/16-9/32

Part Number	Diameter Inches	Overall Length Inches
37870	1/16	1-7/8
37880	5/64	2
37890	3/32	2-1/4
37900	7/64	2-5/8
37910	1/8	2-3/4
37920	9/64	2-7/8
37930	5/32	3-1/8
37940	11/64	3-1/4
37950	3/16	3-1/2
37960	13/64	3-5/8
37970	7/32	3-3/4
37980	15/64	3-7/8
37990	1/4	4
38000	17/64	4-1/8
38010	9/32	4-1/4

3 per pack 19/64-1/2

Part Number	Diameter Inches	Overall Length Inches
38020	19/64	4-3/8
38030	5/16	4-1/2
38040	21/64	4-5/8
38050	11/32	4-3/4
38060	23/64	4-7/8
38070	3/8	5
38080	25/64	5-1/8
38090	13/32	5-1/4
38100	27/64	5-3/8
38110	7/16	5-1/2
38120	29/64	5-5/8
38130	15/32	5-3/4
38140	31/64	5-7/8
38150	1/2	6

SETS

HEAVY DUTY JOBBER DRILLS

Part #	Size	Description
88670	AN-13	1/16-1/4 X64TH
88680	AN-15	1/16-1/2 X32ND
96690	AN-29	1/16-1/2X64TH
96700	AN-60	#1-60
95110	AN-115	1/16-1/2 X64TH A-Z, 1-60

HEAVY DUTY STUB DRILLS

Part #	Size	Description
96680	TN-29	1/16-1/2 X64THS

HEAVY DUTY PARABOLIC JBR

Part #	Size	Description
68090	PT-13	1/16-1/4 X64TH
68110	PT-15	1/16-1/2 X32NDS
68130	PT-21	1/16-3/8 X64THS
68160	PT-29	1/16-1/2 X64THS